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Clinical Aspects of Foreign Bodies in the Alimentary Tract*

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It may seem arbitrary to consider foreign bodies in the alimentary tract as a separate subject but as they give rise in many cases to characteristic symptoms this separate treatment appears to be justified. The clinical manifestations are largely what one would expect and depend on the degree of obstruction, the size of the body, the nature of its surface and the consequent tissue change, the nerve supply of the affected part and also the individual patient's capacity for suffering pain.

When a foreign body case is presented to the surgeon he has only a fleeting cross-section of the signs exhibited and at the moment of examination there may be little to indicate the nature of the trouble. Fortunately, a judicious enquiry into the history frequently elicits further information but the sum total may not warrant a more exact diagnosis than acute abdomen and ancillary aids to diagnosis must be utilised. X-ray should be used at this stage. Fortunately, palpation in dogs and cats is very easy, except in fat subjects.

It is good practice in undiagnosed cases of acute abdomen to make frequent examination of the patient at short intervals as intermittent symptoms not obvious at the first examination can become apparent and give a clue to the actual cause.

I propose by way of introduction to give a short résumé of the signs when the commoner types of foreign bodies pass through the alimentary canal and then to discuss in detail the effects produced in each organ.

Passage of a needle through the alimentary canal.—Cats are frequent sufferers and usually become involved with the thread. The rough papillae on the tongue act as a conveyor and feed the needle into the pharynx. There in most cases it becomes firmly transfixed. Onset of symptoms is sudden, occasionally accompanied by a cry of pain; appetite is in complete abeyance for several days before hunger asserts itself. The patient will then sit over food, look at it longingly but not dare to partake of it: or, exceptionally, he will lick it or take it into his mouth and then drop it out. Palpation of the throat induces exaggerated swallowing movements and resentment of the part of the patient.

Sometimes the needle penetrates the wall of the pharynx or oesophagus and becomes embedded in the subcutaneous tissues giving rise to an abscess. At this stage the animal will partake of milk and possibly a little solid food. The abscess bursts and discharges a foetid reddish mulberry-coloured thin pus and unless the foreign body is removed the wound will close, only to open again in a few days. All such abscesses in the neck should be explored for a possible foreign body.

In the dog it is less usual for the needle to lodge in the pharynx. It frequently passes directly to the stomach and traverses the intestine without any obvious discomfort until it becomes lodged in the rectum, whereupon attempts at defaecation are accompanied by painful cries. Exceptionally, the needle becomes stationary, probably in the wall of the bowel associated with localised abscess formation and blocking off by the omentum. In the early stages of such cases the animal occasionally gives a sudden yelp of pain but after a period no further symptoms are shown. It is well known that in certain sites needles tend to change their position but this does not appear to be one of them. I have known many such cases where the needle remained stationary for periods varying from five to eight years but so far I have only had one opportunity of carrying out a *post-mortem* examination. At first I frequently checked the position with X-ray screen but after a period this was discontinued when it was obvious that the foreign body was stationary and unlikely to cause harm.

The passage of a marble in the 40 lb. dog.—Such a foreign body passes without incident into the stomach and can remain there for an indefinite period without any symptoms being shown, but the moment it passes into the duodenum the dull type of pain associated with small intestine obstruction becomes manifest and continues until the marble passes into the large bowel when symptoms disappear in a truly dramatic fashion. During its sojourn in the large bowel (six to 48 hours) no further symptoms are shown until the marble is being passed through the anal ring when occasionally slight discomfort is obvious. During its presence in the small intestine there is usually vomiting, thirst and complete inappetence accompanying the dull pain. The animal lies in a crouching position for short periods, suddenly rises, walks deliberately and as suddenly stops. He slowly sinks into a crouching position, usually lowering the forequarters first, and may remain in this position for a minute or two, to sink again into the crouching position or reassume the deliberate walk. An observer could easily imagine that the dog had received a command inaudible to human ears: attention; quick march; halt; stand at ease; attention, and so on. A pup will usually show these symptoms and will occasionally give what I describe as a querulous cry: the cry starts low and crescendos to a trumpeting noise: it is quite unlike the sharp cry associated with ordinary pain. Older dogs are generally much more stoical and may show few symptoms of discomfort but are disinclined to move. Appetite is in abeyance and vomiting is usually present while the foreign body is in the small bowel.

The passage of an irregular stone which would cause only partial obstruction gives rise to symptoms as described above but vomiting is not so acute and in exceptional cases nine or ten days might be required for its passage through the alimentary canal; during the last few days vomiting may be completely absent but pain becomes more acute.

A sharp foreign body such as a barbed piece of metal might cause no obstruction but can give rise to pain of a very acute type even in the small intestine. As might be expected, acute pain accompanies its passage through the anal ring but many sharp foreign bodies which cause pain here traverse the small bowel without any obvious discomfort.

Sharp foreign bodies in the mouth.—When these are lodged in the cheeks, on the gums or in the roof of the mouth intense irritation follows and the patient makes violent attempts to remove by rubbing with the paws or rubbing the face on floors, particularly on those with rough carpets. For some reason foreign bodies in the tongue rarely give rise to this symptom but the patient appears to have difficulty in masticating the food and carefully avoids using the affected side. Occasionally one finds a foreign body penetrating the soft palate behind the level of the hard palate and entering the temporal region, there setting up mechanical irritation and inducing abscess formation. In such cases there is difficulty and pain in opening the mouth and symptoms normally associated with pain at the mandibular joint.

One of the most difficult cases I ever had to deal with was a vicious dog which had a child's teapot planted firmly over his upper jaw. He charged about like a mad rhinoceros and before he could be controlled he inflicted several wounds on nearby observers. Anaesthesia is advisable in such cases and the removal of metal foreign bodies is greatly facilitated by the use of strong metal shears. These latter are essential equipment in small-animal practice and are invaluable for removing fish hooks, clips of leads, etc. To remove a fish hook the barbed part is pushed through to permit its removal with metal shears, after which the remainder is easily withdrawn. I once had occasion to remove over a dozen of these from a pup which during an exploration of its master's fishing bag unearthed a book of his favourite flies. Some of these were embedded in the nose, others in the tongue and cheek. The owner did not entirely subscribe to my method of removal but we reached a satisfactory compromise. On another occasion a difficult dog was brought to me by the owner who thought it was suffering from lockjaw as all attempts to part the jaws had failed. There was a history that the trouble had come on suddenly—the dog had rushed to the door to bark at the postman as was his wont when the morning mail was pushed through the letterbox. Under anaesthesia was revealed a triangular piece of paper which the dog had removed from a corner of an envelope and which had become jammed between the upper and lower canines on both sides, thus firmly wedging the jaws together.

Foreign bodies in the throat.—It is impossible to examine a cat's throat thoroughly without the aid of a general anaesthetic and

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even then a special technique is necessary. The tongue is depressed, drawn well forward with tongue or tissue forceps and a small hook retractor is used to fish forwards and upwards the long soft palate, thus rendering the entire throat visible and easily accessible. If this fails to reveal a suspected foreign body it is advantageous to pass a human stomach tube into the oesophagus and if perchance a needle and thread is lodging in the oesophagus retraction of the stomach tube frequently brings up the loose ends and so facilitates the removal of the needle. If a needle is impacted in the pharynx removal is easily accomplished by cutting in two and removing the separate pieces. Foreign bodies in the throat are rare in dogs, a belief to which few owners would subscribe.

Foreign bodies in the oesophagus.—When a large foreign body is swallowed, choking with dyspnoea is seen and the animal may scream with fear. This stage is frequently observed by the owner, as a dog which was previously content to chew a bone will hastily swallow it when attempts are made to deprive him of it. Whenever the foreign body enters the oesophagus all attempts to dislodge by pawing and rubbing cease but the dog gulps (exaggerated swallowing movements) and shows signs of distress. A fairly characteristic spastic contraction of the ventral muscles of the neck, reminiscent of wind-sucking in the horse, is seen (a similar movement is seen sometimes in a bitch with eclampsia). As time goes on symptoms diminish and may be completely absent except when food is taken. Then there is smacking of the lips, salivation, gulping, nausea and a painful retching preceding a difficult vomiting of the ingested food wrapped up in copious tenacious mucus. The vomiting may be accompanied by a cry of pain and the severity of symptoms depends on the extent of the obstruction, *e.g.*, when caused by a sliver of bone the nausea and discomfort may subside without vomiting actually taking place. Foreign bodies in the oesophagus are frequently the epiphyses of pig or lamb bones, pieces of mutton chops (ribs or half sawn vertebrae) and occasionally vertebrae of hare or rabbit. Most authorities stress the danger of feeding on chicken bones but my opinion is in line with an opinion expressed by John G. Wright some years ago, that these rarely cause obstruction of the oesophagus. I have known foreign bodies which remained here for as long as six weeks and occasionally such a case responds to surgical removal. At this stage a typical feature, almost diagnostic, is the stench of decomposing bone. The usual sites in the dog are immediately in front of the cardia, at the level of the aortic arch, or immediately in front of the chest. X-ray is useful for confirmation and a non-X-ray opaque foreign body such as a fish bone can be rendered obvious by the administration of a barium meal. I make it a practice if a foreign body is not very obvious to administer two fairly large gelatine capsules filled with barium and follow their passage down the oesophagus with the X-ray screen. In an unobstructed case they pass down, following a swallowing movement, to the cardia and then drop (cascade) into the stomach; but when there is any obstruction they halt there and oscillate up and down prior to being vomited up. Foreign bodies in this site are best removed with the aid of an oesophagoscope and long Cheveleir-Jackson forceps. It is not generally realised how large an oesophagoscope can be used in the dog. At the end of this lecture I hope to demonstrate one that approximates to my ideal. Foreign bodies can frequently be removed from the lower part of the oesophagus using only long forceps and an X-ray screen. Experimentally, it has been shown that foreign bodies can be removed from the stomach with suitable forceps. After-treatment of cases, particularly where there has been any injury to the oesophagus, is very important to avoid the development of a fatal septic pleurisy. When there is any doubt as to the extent of the injury, food and water should be withheld for at least a week—glucose saline is enough to keep the dog going. I have occasionally to perform a gastrotomy to assist the removal of a foreign body from the cardia but it is only exceptionally that I am forced to perform an oesophagotomy.

Foreign bodies in the stomach.—Contrary to what might be expected, foreign bodies, even large ones, give rise to very few symptoms. I have known such miscellaneous objects as spoons, forks, whistles, several stones as big as ping-pong balls, door stoppers, keys, rubber teats, engagement rings, to be present with few, if any, symptoms being shown. A fairly constant symptom in such cases is an occasional morning sickness, the vomit consisting of white or yellow froth and only happening when the dog is fasting. If this symptom occurs in a dog not prone to sickness it is advisable to examine for possible foreign body. A sharp foreign body in the stomach gives rise to intermittent vomiting of blood. Some inveterate stone eaters will accumulate several pounds of stones in the stomach and literally rattle when walking. Few other symptoms are shown but in time emaciation becomes obvious. When young puppies are first allowed out to exercise runs they frequently swallow large quantities of gravel, earth, etc., and sometimes a fatal illness supervenes. The condition may be associated with a mineral or vitamin deficiency but even when all precautions have been taken to include these in the diet the condition may persist and it may be necessary to exercise on tarmac or concrete runs. Foreign bodies in the stomach can sometimes be removed by following a large meal with an emetic. The surgical risk in gastrotomy is very slight. Cats are not subject to foreign bodies in the stomach but occasionally hair-ball is formed. I think it is as normal for a cat to vomit up tampons of hair as it is for an owl to bring up pellets containing bones and fur. It is a normal physiological process. No subject has probably been so badly written up in veterinary literature. Real fur-ball is a very rare condition: I do not think I have seen half a dozen cases all told, but the symptoms were absolutely characteristic. The cat is constantly hungry and addresses itself with great gusto to food when presented but the appetite is quickly satisfied for a short period and hunger returns as violently again within an hour. If food is withheld frothy morning-type sickness occurs. In the later stages there is marked wasting and the swelling is easily palpated when the cat's forequarters are elevated. The fur-ball is satisfactorily removed surgically—it is important to take steps to prevent a recurrence of the condition.

Intestinal Obstruction

Foreign bodies in the small intestine.—This is one of the most interesting conditions in small-animal practice. I have often wondered as to the actual cause of death in fatal cases of intestinal obstruction. Some cases die rapidly: others last for a considerable period. Several factors are involved. As a result of clinical observation one can be fairly sure of the following—complete obstruction in the duodenum and jejunum leads rapidly to a fatal termination but partial obstruction in this site is not so acute. In high obstruction the dog is dull and heavy and shows the symptoms described earlier under "obstruction by a marble." The nearer the body is to the pylorus, the more frequent the vomiting and the more intense the associated thirst. Some indication of the position of the foreign body can be had from the interval between partaking of water and the onset of vomiting: the nearer to the pylorus, the sooner the vomiting. Should the obstruction remain impacted near this site the dog becomes rapidly dehydrated but administration of salines relieves this condition. The foreign body, fortunately from the surgical point of view, scarcely ever remains for a long period in the first twelve inches of the intestine but complete obstruction in the jejunum is frequent, with death following in three or four days. Should the foreign body pass on, symptoms become less acute and thirst and vomiting are less obvious and in some cases subside, but if obstruction in the ileum is complete the patient will certainly not survive a week. Partial obstruction gives rise to symptoms similar to the above. With a foreign body such as an engineer's nut or an irregular object which permits the passage of fluid, symptoms of dehydration do not occur so readily and a dog can retain such a foreign body for ten to twelve days. In practice it is difficult to be sure, but I think an essential pre-requisite for such survival is that the foreign body must move on from time to time: otherwise circulatory disturbances in the bowel will lead to local gangrene and early death. An interesting feature of obstruction in the small intestine is the absence of acute colicky pains. There are exceptions to this, I know, one being the passage in pups of large quantities of gravel into the small intestine with the production of an acute inflammation, the pain in such cases being shown by continuous grunting or crying: there is a sharp shriek with each expiration, a condition greatly aggravated by palpation of the abdomen, digital pressure causing the cry to mount to a crescendo. The type of pain normally present in obstruction of the small intestine is similar to that shown by cats suffering from acute feline enteritis, that is, mainly dull pain: crying out is exceptional. When a dog has an intestinal obstruction caused by a strangulated inguinal hernia the dull pain is replaced by acute colicky pain, associated with sickness, which continue until gangrene is established. When one suspects a body in the small intestine it can usually be confirmed by palpation. There are few areas where one cannot get the small intestine between the forefinger and the thumb and in contradistinction to an impaction of the large bowel, it can be brought down to the very floor of the abdomen: sometimes it is advantageous to raise the forequarters. There is an area of dilation and congestion immediately prior to the obstruction, gradually improving in appearance as it is traced towards the stomach. As a rule the congested area does not exceed more than nine inches while the bowel beyond the foreign body is contracted and is without any circulatory change. Examination of the bowel which the foreign body has already traversed reveals localised areas of congestion: I have always presumed that these were sites where the foreign body rested and that progress through the bowel was in a series of leaps, probably coinciding with peristaltic rushes. In the case of sharp bodies the areas of lodgment are much more distinct and often have small punctured areas corresponding to projections on the object where these have penetrated the mucous membrane. In

such cases the omentum is adherent and usually effects a satisfactory seal. This is so effective that I think in many cases the sealing of wounds in the stomach and intestine redounds more to the credit of the omentum than to the technical skill of the operator.

The prognosis in cases associated with extensive damage to the bowel is extremely unsatisfactory but an interesting feature is that fatal cases on *post-mortem* examination do not often reveal peritonitis. Death seems to be largely associated with extensive circulatory changes, probably surgical shock. There is no doubt that surgical measures to relieve such obstructions considerably increase the shock risk: for instance, I have never known a case die of shock after the obstruction passed the ileocaecal valve. I never cease to wonder at the complete relief from acute symptoms when the foreign body passes the valve. A dog which had previously been extremely dull, in obvious discomfort and interested only in drinking water, suddenly becomes apparently normal. He may even be willing to partake of food. All this and the foreign body is not passed for another 24 to 48 hours.

One of the most difficult decisions in cases of foreign body in the small bowel is whether to operate or not. I have empirically established an arbitrary standard which I find quite satisfactory in practice. If a dog of about 20 to 30 lb. swallows a round object about the size of a marble there is extremely little chance that relief will be obtained without surgical interference—larger and smaller dogs are assessed on a *pro rata* basis. If it is decided to treat such a case non-surgically general management is extremely important. Drinking water should be restricted to the maximum amount (administered frequently) that the dog is capable of taking without sickness. In a 25 lb. dog I allow two tablespoonfuls every hour and if this amount causes sickness I reduce it. If sickness still continues salines are given hypodermically. This will prolong life from the normal two to three days to about a week, even in cases that ultimately prove fatal. Medicines administered by mouth are inadvisable when the obstruction is high but as it passes down the small intestine half a teaspoonful of liquid paraffin twice daily and very small doses of finely divided bismuth and magnesium are beneficial. When spasms of pain are frequent I administer small doses of morphia and atropine hypodermically and such treatment, especially if followed by pituitrin, expedites the passage of the foreign body. Pituitrin administration is discontinued if it is followed by spasms of pain. I have known an Airedale take ten days to pass a stone as big as a large marble, known in my part of the country as a "plunker." During the last four or five days sickness diminished, thirst was not so obvious but pain was almost constant. I wished to operate but the owner would not consent. Morphia and atropine were given every evening and pituitrin in the morning. The former always gave a measure of relief: the latter caused an exacerbation of symptoms. Relief was dramatic whenever the stone reached the colon, but very extensive damage must have been done to the bowel as appetite did not return for almost a week. When operative treatment is embarked upon measures to combat shock are extremely important—hypodermic administration of salines or intravenous glucose salines, maintenance of heat during operation, measures to keep the peritoneal surface moist, and gentle treatment of tissues during the operation. Surgical measures should be the minimum compatible with the re-establishment of the intact lumen of the bowel and wherever possible an enterotomy should be done in preference to an enterectomy. I practise an incision immediately distal to the foreign body on the healthy bowel even when this entails making a longer incision, as the sutures are thus inserted in healthy tissue. Post-operative treatment is largely to combat shock. It is rare to get peritonitis with the usual aseptic technique but complete packing off must be carried out. If in a case where there seemed a reasonable chance of the body passing, sickness continues in spite of the maintenance of chloride levels, surgical measures must be undertaken at short notice. There is probably only a narrow safety margin of not more than 24 hours.

In most of the problems associated with intestinal obstruction much information can be gained from a study of reported experimental surgery although information contained therein is not directly applicable to naturally occurring obstruction. In most of the records to which I have had access obstruction has been achieved by closing the bowel surgically or by the implantation of a foreign body which cannot move from a fixed site. Experimental surgery indicates that in a high obstruction death is associated with loss of chlorides as a result of vomiting pancreatic and digestive juices and when steps were taken (in the work by White & Fender) to restore the vomitus to the animal's small intestine beyond the obstruction life could be maintained for a month. Some experiments indicate that toxaemia is an important factor and it is considered that the mucous membrane in the affected part of the bowel either produces a toxin or permits the abnormal passage of toxin produced by bacteria in the bowel (Whipple, Stone & Bernheim). Following complete surgical obstruction of the upper part of the intestine of the dog, life was prolonged for four weeks by salines hypodermically but otherwise such cases died within three to four days with hypochloraemia, rise in blood urea and in the carbon dioxide combining power (Wangensteen & Leven). Experimental obstruction in the ileum permits of survival for about a week but saline administration does not prolong this period. In experimental obstruction of the colon the dog survives 40 to 50 days. In the interesting experiment performed by Taylor, Wilde & Harrison a balloon attached to a rubber tube was inserted in the bowel and the combined effect was to cause pressure on the bowel wall at a fixed point while food could still pass through the attached tube. Death resulted quickly even when food was demonstrated to pass through the tube. There was no vomiting and these authors suggest that distention of the bowel is the lethal factor in such cases. Similarly prepared animals with denervated bowels appeared completely normal for 48 hours but thereafter death supervened rapidly. From the above it is evident that in naturally occurring obstruction several factors contribute to the composite clinical picture but if distention on one site is sufficiently severe and long continued, death is inevitable. This is in line with our clinical finding that prognosis is grave in cases associated with marked circulatory changes. Examination of the enervation of the alimentary tract leads one to expect the type of pain which does in fact appear in practice. Tactile pain ceases behind the pharynx and is not re-established till just inside the anal ring. True visceral pain does occur in our subjects, as probably does referred pain, but tactile stimulation of the bowel fails to elicit a pain response. The medium of induction appears to be traction; contraction of the whole viscus is not in itself sufficient to establish pain but palpation of the abdomen causes pain and the dog will sometimes turn to snap, but this is probably due to pressure on the overlying peritoneum. Pollock & Davies stimulated the peritoneal surface of the diaphragm in dogs and induced pain evidenced by increased respirations, crying and struggling. This type of pain was obstructed by:—

1. Section of the phrenic.
2. Removal of the cervical chains.
3. Severing the 8th cervical and 1st, 2nd and 4th anterior roots.
4. Transection of the cord at 7th cervical.
5. Destroying cord at 1st and 2nd dorsal.
6. Section of posterior cervical roots.

Pain impulses travel over the phrenic, enter the cord by the posterior cervical root, descend the cord to the level of the 8th cervical and 1st, 2nd and 3rd thoracic segments. Connections are then made with cells in the lateral horn of grey matter from where impulses pass by sympathetic pre-ganglionic fibres to the cervical sympathetic chain and then by post-ganglionic fibres to the skin, blood vessels, meninges and other structures where by some vaso-motor (?) or hormonal (?) process the sensory endings of the cerebro-spinal system are stimulated and a sensory impulse travels over the ordinary cerebro-spinal system, enters the cord by the posterior roots and ascends to consciousness.

Following these experiments, Taylor, Wilde & Harrison described how the administration of pilocarpine and histamine, followed by the repeated induction of vomiting or by removal of gastric secretion by stomach tube to induce the loss of chlorides, lowered the value of blood chloride to 40 per cent. for a period of several days without producing any serious effect, supporting their view that the most important lethal factor is distention of the bowel. In naturally occurring cases, however, chloride loss must play a very important part and in obstruction associated with strangulation toxaemia is probably a very important factor.

Foreign bodies in the large bowel.—These rarely give rise to acute trouble until engaged in the anal mucosa, when pain can be extremely acute. I have never known a case of fatal obstruction in the large bowel in the dog and in the exceptional cases where the foreign body had passed into the large bowel prior to opening the abdomen I have always refrained from opening the colon and permitted the body to pass normally. Foreign bodies such as thermometers, needles, etc., are easily removed from an anaesthetised dog with the aid of a proctoscope, the human child and adult size covering any range likely to be met. When an owner complains that a cat has an obstruction in the bowel one can be almost sure that the condition is a urethral obstruction. The cat cries out, spits violently at its nether end and makes frequent attempts to pass something. The contrast is interesting when constipation is present. It is not at all unusual to have a cat constipated for about a month, the mass consisting of inspissated faeces reinforced with fur: little or no attempt is made at defaecation

and I think such cases would surely die unless relieved. I induce light anaesthesia and break down the mass, previously well lubricated, and remove digitally.

Mention has been made earlier of X-ray, but several pitfalls have to be guarded against. Most types of rubber are X-ray opaque but sponge rubber (type found in Sorbo balls) is only slightly so and the variety known as art gum used by artists on drawing paper is non-X-ray opaque. Most types of glass are non-X-ray opaque (unless they contain lead), as are corks and wood, and all edible nuts. But peach stones show distinctly and plum stones slightly on X-ray.

Invaluable as all ancillary aids to diagnosis are, they are no substitute for clinical experience and where symptoms indicate the presence of a foreign body which cannot be demonstrated by X-ray, recourse should be had at once to exploratory laparotomy.

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Discussion

Mr. R. F. Hall, having congratulated Mr. Weipers on his most interesting paper, emphasised the difficulties of making a diagnosis when dealing with a fat dog and also the difficulty of discovering a foreign body such as a needle once it had passed the throat. With reference to Mr. Weipers' description of the symptoms associated with a marble in the intestines, he had not encountered many of these but had noticed mainly the symptoms of dull pain and the absence of the passage of faeces. The sticky texture of the rectum was also characteristic and anyone making an examination wearing a finger-stall might miss this. There was more definite pain with a rough type of foreign body. Gray's gag was particularly useful in examining a dog. Cats were best under an anaesthetic when being examined for the presence of a foreign body. He had never succeeded in bringing up a thread on the stomach tube. Dogs sometimes would play with a ball while a foreign body was present in the oesophagus. Foreign bodies were sometimes vomited following the hypodermic administration of morphine. He asked why Mr. Weipers preferred gastrotomy to oesophagotomy. He would have liked to hear more about differential diagnosis. One must use care in handling the abdomen because of the danger of rupturing small vessels in the mesentery.

Mr. Hall stressed the difficulty of differential diagnosis in obstruction of the small intestine, intussception and enlarged mesenteric glands. He considered that it was extremely difficult to diagnose obstruction by soft foreign bodies such as dusters, handkerchiefs, sponges. A favourite method near Edinburgh of destroying one's neighbour's dog was to heat a sponge in fat and feed the resultant cake to the dog, and he had discovered such sponges impacted in the small intestine in several cases when conducting *post-mortem* examinations. He had had several cases of farm dogs with obstruction at the pylorus caused by the ingestion of cotton wool milk filters.

Professor G. F. Boddie, after expressing his appreciation of the paper, referred to differential diagnosis and the use of X-rays. X-rays had their limitations and a thorough clinical examination of the patient was essential. Owing to the present-day food restrictions there was a change in the nature of foreign bodies encountered as compared with pre-war days. Bismuth was also of limited value although considerable knowledge could be gained through watching, by means of the X-ray, a gelatin capsule filled with bismuth. Mr. Hall had mentioned that bismuth was only of limited value in demonstrating intestinal obstruction and he considered this was inherent in the nature of the associated changes and accumulation of fluids: the bismuth probably never reached the obstruction before it was regurgitated and vomited. There was often particular trouble with rubber bodies as many samples were not opaque to X-rays. Foreign bodies might occur in the posterior nares, particularly where a dog choked and vomited and a fragment was propelled to the posterior nares where it lodged and decomposed, giving rise to an unpleasant smell. He had encountered a lady's silk stocking as a foreign body in a dog's alimentary canal.

Dr. J. S. A. Spreull: Mr. Weipers had not stressed the use of a sound—a metal curtain hanger in combination with a cork of appropriate size made a useful sound which could be used along with Gray's gag to feel an obstruction. He emphasised that an animal fed doughy bread (and he preferred using bread to meat) would often vomit when a foreign body was present. Bread soaked with barium suspension could be used for diagnosis in combination with the X-ray. He agreed with Mr. Weipers that a cardiac obstruction was most easily reached from the abdomen. There was considerable danger of rabbit and chicken bones obstructing the stomach at the pylorus. He recommended the use of the human bronchoscope for locating foreign bodies.

Major Linton Robertson emphasised the difficulties with fish hooks in the alimentary tract of cats. He found he could handle a cat without using an anaesthetic if he put it in a canvas sleeve about 18 inches long.

Mr. S. Jennings stressed the importance of the state of the rectum in diagnosing a foreign body—although not completely diagnostic, the feel described by Mr. Hall made one highly suspicious.

Principal Mitchell: It had been a great pleasure to hear Mr. Weipers. He emphasised the importance of the vascular and nervous effects of foreign bodies. He liked Mr. Weipers' references to experimental surgery which was much to the fore to-day. The symptoms associated with a foreign body were sometimes confused with those of interstitial nephritis and pyometra: both the latter often gave symptoms confusible with those of a small foreign body. He would have liked to know more about the pathological changes associated with the presence of foreign bodies and hoped to hear Mr. Weipers again when he had had time to follow more of the pathology associated with the presence of foreign bodies.

Professor Thompson emphasised the difficulty of differentiating intussusception from a type of foreign body such as a rubber teat; also the difficulty of differentiating a ring type carcinoma in the oesophagus, so often noticed in old cats, from a foreign body. Large masses of intestinal worms might cause extreme pain. He was also interested in the actual cause of death when a foreign body was present.

The Reply

Mr. Weipers: He agreed with Mr. Hall about the difficulty of diagnosing the presence of foreign bodies in fat dogs.

With regard to differential diagnosis in the case of intussusception, the sausage-shaped object, concave dorsally, could often be palpated and pulled to the floor of the abdomen. Exploratory laparotomy was often of value. The characteristic feel of the rectum described by Mr. Hall he considered occurred in all cases of dehydration. The symptoms he described in connection with a marble in the small intestine were not always present but were very often present in bad cases. He was in agreement with Mr. Hall about the usefulness of Gray's gag. With regard to the point raised about the demonstration by barium administration, he considered that the barium probably never reached the foreign body in the intestine as a large part of the bowel anterior to the foreign body, particularly if the obstruction were complete, held an accumulation of digestive secretions. Gastrotomy was not a substitute for oesophagotomy but in the case of bodies lodged in the upper parts of the oesophagus, removal could often be accomplished with the aid of the oesophagoscope while those lodged at the cardia could be reached by means of gastrotomy.

He concurred with Professor Boddie that the X-ray was not the answer for the diagnosis of foreign bodies but only ancillary, and also that bismuth was not the whole answer. Although he appreciated the value of a sound, as described by Dr. Spreull, he usually managed to make a diagnosis without one: actually he never used a sound. He agreed with Principal Mitchell that experimental surgery could throw much light on the pathological effects of foreign bodies and also that pyometra and nephritis were most commonly confused with foreign bodies. The age and sex of the animal was of some diagnostic value in many of these cases. He agreed with Professor Thompson with regard to the difficulty of differential diagnosis in cases where there was a ring carcinoma: the history of gradual onset of obstruction in old cats gave a pointer to diagnosis and barium administration showed an hour-glass obstruction which was diagnostic.

Weekly Wisdom

The eternal resilience of the human spirit is perhaps its most striking, certainly its most necessary, quality. . . . There is a supreme unreason, a faith, a hope in mankind.—Walter Elliot.

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Our export trade in pedigree stock is not nearly as large as it might be. One of the chief causes is the almost prohibitive level of freight charges on animals destined for other countries. Before the war, for instance, the freight and fittings charge for cattle shipped to South America was little more than £20 per head. To-day it is £90.—*Farmer and Stock-Breeder.*

CLINICAL COMMUNICATION

Some Remarks on the Use of Penicillin as a Topical Application

V. E. SENIOR

Department of Agriculture, Regina, Canada

A study of Professor Wright's article in *The Veterinary Record* of November 15th has prompted me to record some results obtained from the use of penicillin as a topical application in the treatment of abscesses and fistulous conditions and also in acute and sub-acute mastitis in the cow.

One outstanding case involved a ten-year-old cross-bred Belgian mare first noticed to be lame in the near fore leg, the lameness subsiding slightly but recurring with greater severity in the course of a few days, when a discharge became apparent and a punctured wound was located on the flexor aspect of the knee joint. Continued lameness was reported, coupled with swelling of the joint and an increase in the amount of discharge which, at the time of my visit about five weeks after symptoms were first noted, was copious and purulent in character. The joint was swollen and painful, pressure or flexion increased the discharge, and lameness was acute.

Treatment carried out by the owner included hot fomentations, poulticing and bathing with crude disinfectant. A bandage had been applied to protect the injury from the intense cold and the foetid odour which accompanied its removal probably came from the matted discharges adhering to the hair. The temperature of the mare was normal and if the owner's information was to be relied upon, at no time had she shown any signs of a systemic disturbance. With infection already established, the careful use of a probe was not considered to be contra-indicated and the opening of a fistulous tract was located on the flexor aspect of the joint, about one inch below a horizontal line drawn from the metacarpal tuberosity. Proceeding in a forward and upward direction, the probe penetrated the tract for a distance of 4½ inches and if the condition had been complicated by a general reaction, a septic arthritis would have been diagnosed, but in view of the rapid and uncomplicated recovery following treatment the case would appear to resolve itself into a synovitis of the tendon sheaths at the back of the joint.

In the consideration of treatment and methods to adopt in Canada, the restrictions imposed by distance and inaccessibility of premises in the winter time must be taken into account, as after-treatment is usually in the hands of the owner. It was accordingly decided to experiment with penicillin bougies as this offered a means of after-treatment which would be relatively simple for the owner to carry out. These bougies are 2½ inches long, of low melting point, and contain 25,000 units of crystalline penicillin in a milk soluble polyethylene glycol base. They are marketed by the Canadian firm of Ayerst, McKenna and Harrison, primarily for the treatment of bovine mastitis.

The fistulous tract was just the right diameter and in inserting the bougies little pressure was required; two were accommodated end to end and a further two inserted by the owner the same evening. On examination 24 hours later, the general inflammation surrounding the joint had almost subsided and only a small amount of discharge was present on the bandage. The tract had to be opened up with the probe in order to insert two more bougies. I was fortunate in being able to see the mare the next day when it was found that the inflammation had entirely subsided, no discharge was apparent, and weight was being taken on the limb. One bougie was inserted with difficulty, no further treatment being necessary. In five days following the commencement of treatment the animal was walking sound and doing light work.

Considerable success has attended the use of penicillin bougies in the treatment of abscesses in the bovine. In one case a large abscess of football size on the hind quarter of a cow was evacuated under epidural anaesthesia, the foetid pus being expelled with considerable force when the abscess was lanced. The pus seemed to be dispersed between the muscles and muscle fibres, and no actual abscess cavity could be detected. It was presumed to be the result of a kick from a horse and the smell of the pus was similar to that associated with *C. pyogenes* infection. Treatment consisted of irrigation with normal saline solution which brought away a large amount of detritus; then kneading of the muscles in the vicinity produced an ominous squelching sound and the unhappy thought that I was doing more harm than good. Several penicillin bougies were then inserted and pushed into the various corners and ramifications of the abscess by hand. A supply left with the owner for after-treatment was returned to me as recovery had taken place without further interference.

With regard to the treatment of acute or sub-acute mastitis, an accurate diagnosis as to the type of infection can rarely be made as laboratory facilities are limited and an opinion must be formed on the spot because it is unlikely that a further visit to that particular farm can be made for perhaps weeks or months. Until introduced to penicillin bougies I favoured the various infusion remedies such as acriflavine and suspensions of the sulpha drugs, but the hit or miss feeling associated with their use, together with the hazards involved in the owner continuing such treatment, were unsatisfactory features. In summer, the heat precluded the carrying round of ordinary penicillin sodium unless refrigerated. The bougies proved to be a good acquisition, being stable and simple to use so that the owner could continue the treatment for the required three days, one bougie being inserted twice daily after milking. Such cases as I have followed up have responded favourably, although medication has always been coupled with an intensive educative programme, as many owners are woefully ignorant of mastitis and the ordinary hygienic precautions required in dealing with it.

I note with interest Professor Wright's remarks relative to the use of sulpha drugs as a wound dressing in the bovine and would state that preference for penicillin was occasioned more by circumstances than any specialised knowledge on the anti-bacterial activity of the respective agents. Penicillin solutions and bougies have been used in a number of traumatic and septic conditions with remarkable results, and while recognising that any abscess cavity or wound will respond to proper drainage and medication, I would suggest that many cases formerly requiring hospital treatment and surgical interference can now be treated by the field veterinarian with his limited facilities and sometimes Heath Robinson improvisation.

ABSTRACTS

[The Use of Stainless Steel Wire as a Suturing and Ligating Material in Veterinary Surgery. O'Connor, J. T. (1947.) *J. Amer. vet. med. Ass.* **111**. 371-375.]

The author refers to the part suturing plays in successful surgery and enumerates the characters of an ideal suture. He suggests that the increasing popularity of metal wire is due to the fact that it more nearly approaches the ideal than do other materials.

Stainless steel wire is easily sterilised by either boiling or chemical methods—unlike catgut, which is difficult to sterilise. Less reaction is produced by steel wire than with catgut, silk, silkworm gut or horsehair, and undesirable sequelae, as a result of reaction, such as delayed union, disruption of abdominal wounds, and cutting into tissue, which may follow the use of catgut, do not occur with this material. It has been demonstrated in rats that healing wounds sutured with wire possess the greatest tensile strength. There is no capillary effect and it can be used in septic foci without the danger of sinus formation.

Indications for stainless steel wire include both buried and superficial sutures, closing incisions in the abdominal wall, suture of septic wounds, fistulae, herniae, mucous membranes, and in plastic surgery. The material does not corrode and it is not necessary to remove sutures.

Haemostatic forceps should be used to tie a well-seated knot. Ends must be cut very short, to prevent irritation to surrounding tissues. The knot is, however, stable and unlikely to become loosened. The author stresses the importance of applying each suture loosely so that sufficient slack is left to allow the box lock of mosquito forceps to pass freely underneath. Any kinking and twisting must be avoided. It is not satisfactory to use steel wire in conjunction with other suture materials.

The sizes of stainless steel wire range from 18 to 40 (B and S) gauge, of which the smallest sizes, Nos. 38 and 40, are too fine for veterinary surgery. No. 35 is about the size of hair and has a tensile strength of 2·5 lb. Medium sizes, Nos. 28 and 30, replace equal sizes of silk worm gut as buried sutures and for suture of wounds. No. 30 gauge has a tensile strength of 15 lb. and is adequate for suturing any abdominal incision. Nos. 18 and 20 are suitable for bone fractures.

The author has used the material in both large- and small-animal surgery. No. 32 has proved non-irritant and ideal for entropion operation. He has used it for skin suture under plaster, in cases of compound fracture. No. 35 has been employed

for abdominal surgery in both the dog and cat without the use of post-operative bandage, using a layer of interrupted sutures in fascia, muscle and peritoneum, and a similar layer in the skin. In large-animal surgery the use of steel wire is restricted to sites where tension is slight. No. 32 can be used successfully for the suture of eyelids, lips, nostrils, mucous membranes and in neurectomies. The sutures tear out if tension is excessive.

P. K.

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[Trilene Anaesthesia in Small-animal Surgery. Henry, James W. (1947.) *Vet. Med.* **42**. 471-474.]

Trilene (trichlorethylene and ·01 per cent. thymol) is a general inhalation anaesthetic used in human surgery. The author describes its use in small-animal practice, based on the experience of 1,600 cases, including dogs, cats, pigs and poultry. The animal is anaesthetised by the passage of oxygen through the liquid Trilene into a mask. Induction of anaesthesia takes from 1½ to 5 minutes depending upon the size and condition of the animal. Relaxation is complete, and there is little salivation. The depth of the anaesthesia can be controlled by the oxygen flow. Complete recovery varies from 5 to 30 minutes. Out of the 1,600 cases, five deaths were recorded.

D. W. J.

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[Artificial Insemination in Cattle: A Review. Edwards, Joseph. (1947.) *Emp. J. exp. Agric.* **15**. 149-159.]

In a brief review the author traces the development of artificial insemination in the various countries of the world and indicates the factors which prompted its introduction. He gives an outline of the organisation and control of A.I. in England, including a map which shows the existing and projected centres and subcentres in Great Britain.

A typical centre, suitable for 15 to 20 bulls, is described, together with a ground plan and description of the layout of buildings. Management, staffing and stocking of the centre are also outlined.

The author discusses breeding policy and indicates the problems involved in livestock improvement and bull selection. Brief reference is made to the lines along which research work is progressing, on semen production, storage and dilution and the factors affecting conception.

P. K.

QUESTIONS IN PARLIAMENT

Poultry (Stock Improvement) Advisory Committee

Mr. Randall asked the Minister of Agriculture, in view of the disbandment of the present Poultry (Stock Improvement) Advisory Committee, if he will state the number of meetings held; the percentage of attendance at those meetings; and whether any report will be made available of the work in which the committee was engaged.

Mr. T. Williams: The Poultry (Stock Improvement) Advisory Committee was appointed for a period of three years, and has recently been re-constituted. Eight full meetings were held during the period, with an average attendance of 83 per cent., in addition to 27 meetings of sub-committees, on whom the detailed work devolved. The Committee is a standing advisory committee, and reports are not necessarily published, but information of progress is given from time to time and a new poultry stock improvement plan drawn up by the Committee is being published shortly.

LIVESTOCK SETBACK

Commenting on the section of the Government's Economic Survey devoted to agriculture (reviewed in our last issue), the *Farmer and Stock-Breeder* observes: ". . . Thus the recent bright hopes of feeders appear to have had no real foundation. An expansion of breeding stock in pigs and poultry will largely have to depend upon to-day's supplies, on the ingenuity of farmers and, in the case of cereal growers, the 20 per cent. of millable wheat and barley which may be retained this year for feeding. The much publicised two million tons of coarse grains from Russia and the Argentine will be needed to meet the coupon issues of cereal feeding-stuffs and to compensate for reductions in home production owing to the poor 1947 harvest. It is for these reasons that Mr. Tom Williams finds himself in a dilemma in face of the constant demands to alter the system of allocation of feeding-stuffs. The Minister is anxious to meet the quite rational desires of newcomers to the industry, but until increased supplies from overseas are forthcoming he cannot accommodate them except at the sacrifice of existing feeders. This setback in livestock bears out our contention that it is no use setting targets without the raw materials."

NOTES AND NEWS

Diary of Events

Mar. 31st.—Annual Meeting of the Scottish Metropolitan Division, N.V.M.A., at the Royal (Dick) Veterinary College, 2.30 p.m.

April 1st.—Meeting of the West of Scotland Division, N.V.M.A., Clinical Club, at the Glasgow Veterinary College, 7.30 p.m.

April 1st.—Meeting of Central Division at the Royal Veterinary College, Camden Town, at 2 p.m.

April 2nd.—Meeting of the Sussex Division, N.V.M.A., at Brighton (Old Ship Hotel), 2.15 p.m.

April 5th.—Meeting of the Farmers' Club, at the Royal Empire Society, W.C.2. (Dr. T. Dalling and Dr. A. W. Stableforth: "Bovine Mastitis.")

April 6th.—Meeting of the Derbyshire Division, N.V.M.A., at the Midland Agricultural College, Sutton Bonington, 2.15 p.m.

April 7th, 8th, 9th.—N.V.M.A. Committees and Council.

April 9th.—Meeting of the Biochemical Society, in University College, Dublin, 1.30 p.m.

April 10th.—Annual General Meeting of the Association of Veterinary Inspectors (Ministry of Agriculture and Fisheries), at the Royal Veterinary College, N.W.1, 2 p.m.

April 13th.—Meeting of The Association of Veterinary Teachers and Research Workers at the University, Brownlow Hill, Liverpool, 11 a.m.; to be preceded by Annual Meeting of the Northern Region, at 10 a.m.

April 14th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 2.30 p.m.

April 14th, 15th and 16th.—Quarterly meetings of Council, R.C.V.S.

April 16th.—Meeting of the Lincolnshire and District Division, N.V.M.A., at Grantham, 2.15 p.m.

April 22nd.—Meeting of the South-Eastern Division, N.V.M.A., at Maidstone (Royal Star Hotel), 2.30 p.m.

Sept. 8th to 15th (inclusive).—N.V.M.A. Congress at Southport.

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Congress at Southport: Simpson Golf Trophy

The Provisional Committee considers that present indications are that there will be inadequate entries to justify holding the competition this year. For guidance the Committee would be glad if all who would like this competition to be held and would support it by entering, would notify the Hon. Local Secretary, Mr. H. Raynor Hewetson, M.R.C.V.S., 26, Princes Street, Southport, not later than April 30th. If sufficient entries are not promised by then the Committee proposes to abandon the competition this year.

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R.C.V.S. OBITUARY

Begg, Hugh, Sen., Elm Lodge, Bothwell Road, Hamilton, Lanarks. Graduated Glasgow, April 19th, 1887. Fellowship May 18th, 1912. Died March 13th, 1948; aged 81 years.

Mr. Hugh Begg, Sen., F.R.C.V.S.

Pioneer in Veterinary Public Health

Britain's First Whole-time County Veterinary Inspector

It is our sad duty to record in this issue the death of Mr. Hugh Begg, Sen., of Hamilton, Lanarks., who passed away in a Glasgow nursing home on Saturday of last week.

It was Hugh Begg's ability to take full advantage of his appointment as the first whole-time County Veterinary Inspector in Great Britain—on August 1st, 1910, as County and District Veterinary Inspector for Lanarkshire—that created a new and vitally important era in veterinary public health work. A forceful personality, he did much to advance the principles of hygiene in dairy farming and was a well informed advocate and executant within his own sphere, of measures to eradicate tuberculosis of bovines.

Pending the publication in our columns of fuller reference to these activities and many others, we would now briefly record that prior to his County appointment Mr. Begg was a leading figure in East Kilbride, where he practised for 22 years, a notable contributor to veterinary literature, including papers to Congresses of the N.V.M.A. and the Royal Sanitary Institute, and for many years examiner for the R.C.V.S. in Materia Medica and for the B.V.Sc. and D.V.H. of the University of Liverpool. Mr. Begg was the only member of the profession to be elected to the chair of the Royal Sanitary Association of Scotland, for which body he was an examiner in meat inspection.

Mr. Begg was a Governor of the Glasgow Veterinary College (of which he was one of the earliest graduates from the private school of Principal McCall) from the day the institution was brought under a Board of Governors in 1906. He was Vice-President of the Board for some years until 1935 when, after his retirement from the County Inspectorship, he was prevailed upon to take up the professorship of parasitology at the College.

To the widow and others bereaved we extend our deepest sympathy: Mr. Begg's eldest son is Mr. Hugh Begg, F.R.C.V.S., D.V.S.M., in practice at Strathaven, Lanarks., his youngest being Dr. Robert Begg, of Wembley Hospital, London.

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PERSONAL

Birth.—HINDLE.—On March 10th, 1948, at The Eddystone Nursing Home, Southsea, to Margery, wife of Capt. J. Hindle, M.R.C.V.S.—a son, Michael John.

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Colonial Veterinary Service Appointments.—The following first appointments are announced: of Mr. R. W. Butler, M.R.C.V.S., as Veterinary Officer, Tanganyika, and of Mr. R. M. S. Neave, M.R.C.V.S., as Veterinary Officer, Kenya.

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THE ANIMAL HEALTH TRUST

Appeal for Strong Veterinary Representation on County Committees

Sir Cleveland Fyfe, Organising Secretary of the Animal Health Trust, informs us that his recent letter to members of the N.V.M.A., has resulted in many members of the profession enrolling as supporters of the Trust in the counties.

The recent acquisition by the Trust of an estate in Huntingdonshire on which to establish a group of farm livestock Research Stations will bring home to the farming community the vital importance of its work from the standpoint of promoting the development of livestock production and represents the heaviest commitment which the Trust has yet undertaken. These considerations, states Sir Cleveland, add urgency to the setting up of County Committees to enlist support amongst livestock owners and animal-lovers generally for the Animal Health campaign and preliminary work is now proceeding with a view to convening inaugural meetings in Northumberland, Durham, Lancashire, Cheshire, Lincolnshire, Berks, Bucks, Oxfordshire, Kent, Hampshire, Cornwall, Worcestershire, and Glamorgan.

It is hoped that the veterinary profession will be strongly represented on these County Committees and their sub-Committees and all veterinary members of the Trust will receive personal invitations to attend the inaugural meetings.

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Bloodstock Industry Committee

EXPERIMENTAL WORK IN PROGRESS AT NEWMARKET

Colonel George Barnett, M.R.C.V.S., Secretary of the Bloodstock Industry Committee of the Animal Health Trust, reports that its £1-a-mare Scheme, operating among stud owners, has lately met with considerable success, total contributions from that source standing at £711 13s. 4d. with various amounts still to come in. In 1946 the Scheme realised £519 5s. 10d. for the Trust and in 1945 the amount raised was £566 1s. 0d.

Mr. W. J. Kelly of the Palmerstown Stud, through Lord Willoughby de Broke, has given the Trust a nomination to The Solicitor. If all the subscribers to the Chanteur Syndicate agree, the Trust has been promised a nomination to that horse.

As to work at the Equine Research Station at Newmarket, there have been admitted to Balaton Lodge some half dozen "infertility cases" which are under constant observation. One of the most important problems in stud-management is the determination of the average duration of life (or, to be more precise, fertilisable life) of the sperm after service. Precise knowledge on this point will enable the Trust to give sound advice as to the best time in the oestrus cycle for a mare to be served. It is well known that, in practice, many mares are served far too early after the beginning of oestrus and have to be covered again later, to the detriment of stallion-energy. This work will involve very frequent internal examinations. At times a considerable number of the 22 pony mares utilised for the work will have to be so examined every four hours.

In connection with investigation into parasitism, a start has been made with the preliminary work required to assess the value of the newest parasiticides for worms in horses. This will necessitate experimental dosage of animals (foals for the present) which have known specific infections.

Main objects of the parasitological programme are:—

1. To detemine whether it is possible to rear worm-free foals under *experimental* conditions, and if so, whether and how similar methods may be successfully applied in the practical working of a stud.
2. To work out the life-history of the parasitic worms regarding which there are many gaps in our knowledge.

All this means long-term research. The problems bristle with difficulties and their solution will demand infinite care and patience.

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B.M.A. AND THE HEALTH SERVICE

DEMAND FOR SUBSTANTIAL CHANGES IN ACT AS CONDITION OF ENTRY

At a meeting of the British Medical Association held in London on Wednesday of last week, the 400 or so doctors present, representing all parts of the country, decided unanimously not to enter the new health service on July 5th unless substantial changes are made in the governing Act. A resolution from the council embodying this decision reaffirmed the desire of the medical profession for a comprehensive health service, but urged that in the public interest changes in the Act were necessary to prevent doctors being turned into State servants with harmful consequences to patient and doctor alike. The resolution went on to express the hope that the Government would make it possible for the profession to co-operate by making such changes, as it was not "in the best interests of the public or of medicine for members of the profession to enter the service until such changes were made."

In moving the resolution Dr. H. Guy Dain, Chairman of the Association, who was warmly applauded, made a vigorous reply to Mr. Bevan's accusations that the recent doctors' plebiscite was unfair. Dr. Dain said that the powers possessed by the Minister would lead to the enslavement of the medical profession, who were engaged in a life and death struggle for their freedom and independence. Throughout the meeting, however, Dr. Dain made it clear that the doctors were ready to listen to constructive proposals for the working of the service, should Mr. Bevan wish to make new proposals to them.

Lord Horder referred to "mendacious statements" in the Commons and sections of the Press which he said had caused doubt in the public mind as to whether the B.M.A. was a constitutionally democratic body, and whether it did in fact represent the profession. "If the public considered the situation," he said, "it would realise the unscrupulousness of a Minister who, having as a result of two short sessions failed to get what he wanted, should say that this body was a small body of spokesmen who had consistently misled the great profession to which they were supposed to belong. And he accused the B.M.A. of being involved in a squalid political conspiracy. In the public interest it seems desirable to nail these lies to the mast," Lord Horder added.

It was announced that during a private session a resolution calling for an independence fund to help finance the profession's activities during the dispute was adopted unanimously.

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VETERINARY EDUCATION IN EIRE

The Irish Veterinary Journal devotes the editorial in its current issue (February, 1948) to the subject of veterinary education in Eire, usefully summarising, as follows, information which has appeared from time in our own columns, and commenting on the position:

It is not possible, with the limited space at our disposal, to go fully into the recent changes which have been made in regard to the training of veterinarians in this country. While the profession in Great Britain were debating the proposed establishment of a University system in veterinary education, one of our Dublin Universities decided to establish a faculty of Veterinary Science. For the present the degree (B.Vet.Sc.) in the National University is conferred only on matriculated students of the Veterinary College subsequent to their obtaining the diploma of the Royal College of Veterinary Surgeons. Legislation will be required to make this or some similar degree a qualifying one and such legislation may be expected in due course. We have thus the distinction of being first in the field in these islands with a full faculty of Veterinary Science having the same degree of autonomy as other faculties in the University.

The other University, that is, Trinity College, has also granted facilities for veterinary students to obtain the degrees B.A. and

B.Sc. (Vet.), the courses running concurrently with that of the M.R.C.V.S. diploma. As in the National University, the veterinary degree is a post-diploma one. Both universities have recognised the professors of the various subjects in the Veterinary College for the purpose of these degrees, in fact, the National University has appointed them as part-time professors of University College, Dublin, and the Principal of the Veterinary College has, in addition, been appointed first Dean of the faculty. One may be pardoned for presuming that Trinity College will follow suit in establishing a Veterinary faculty in the not too distant future.

Veterinary education in Great Britain is developing on similar lines, in conforming with the recommendations of the Loveday Committee. We hope that they will be able to make arrangements so satisfactory to the profession as those which have been made here and that they may not, in certain cases, find themselves partially if not entirely absorbed in another faculty, a position which we had feared but were fortunate to escape.

The negotiations which preceded these arrangements required skill and tact and we are glad to take this opportunity of thanking the officials of the Department of Agriculture, particularly the Secretary, Mr. Sean O Broin, for the able manner in which the negotiations were conducted. We would also like to place on record the large part which the Principal of the Veterinary College, Professor T. G. Browne, has played in bringing the negotiations to successful conclusion. To the governing bodies of both Universities who have generously appreciated our desire for full University status, the profession should indeed be grateful. May our young graduates who will reap the benefit of these developments prove their gratitude by living up to the best traditions of these Colleges. We have no doubt that they will reflect credit on those who have been courageous enough to recognise in the art and science of Veterinary Medicine and Surgery a calling worthy of the status which has been accorded to other learned professions.

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ROYAL SOCIETY FELLOWSHIPS

The list of distinguished men of science recently elected into the Fellowship of the Royal Society includes the following:—

Sir John Claud Fortescue Fryer, Secretary of the Agricultural Research Council; distinguished for services to agricultural science and contributions to applied entomology.

Alan Lloyd Hodgkin, Assistant Director of Research in Physiology, Cambridge; distinguished for researches on the nature of nervous conduction.

Robert Alexander McCance, Professor of Experimental Medicine, Cambridge University; distinguished for contributions to metabolic studies of human beings.

Sidnie Milana Manton, Lecturer at King's College, London; distinguished for her work on the crustacea and other invertebrates.

Dorothy Mary Needham, Biochemist, School of Biochemistry, Cambridge University; distinguished for researches on the biochemistry of muscle.

James Herbert Orton, Professor of Zoology, Liverpool University; distinguished for investigations in marine biology.

Gilbert Wooding Robinson, Professor of Agricultural Chemistry, Univ. College of North Wales, Bangor; distinguished for contributions to study of soils.

William Albert Hugh Rushton, Univ. Lecturer in Physiology, Cambridge; distinguished for researches on the effect of electrical stimuli on muscles and nerves.

George Robert Sabine Snow, Fellow of Magdalen College, Oxford; distinguished for work on plant hormones and growth.

Frank Yates, Chief Statistician, Rothamsted Experimental Station; distinguished for contributions to statistical analysis of agricultural problems.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

Correspondents should write as briefly as possible and letters should not exceed 350 words.

BLACK DISEASE OF SHEEP

Sir,—The determination of the existence of black disease of sheep in this country (Jamieson *et al.*, *Vet. Rec.*, *60*, 11-14) should not, we think, pass without comment.

We had the advantage of collaborating with these workers in a study of the causal organism (*Cl. oedematiens*) and of the characteristic local necrotic lesion in the liver. This stimulated us to review our past experience in attempting to assist practitioners in the diagnosis of disease in sheep, characterised by sudden death. The difficulty in having specimens from this type of case in a condition suitable for bacteriological investigation, and our interest in enterotoxaemia, had led us to suggest that the most suitable specimen was a length of the latter part of the small intestine tied off at each end to retain its contents. Obviously this limited the field of investigation because it excluded the possibility of covering a condition not arising from multiplication and toxin production of intestinal anaerobes. However, in some of the instances where the examination for *C. welchii* types or their toxins had proved negative, more extensive specimens were received. All too frequently, delays in transport caused them to reach our hands in a somewhat unsuitable condition. There is some evidence that in several instances we received specimens from an outbreak of black disease. For example, from material received from Devon in 1945, *Cl. oedematiens* was isolated from very suggestive liver lesions. During the autumn of 1947, good specimens from the same source enabled black disease to be defined as the cause of heavy sheep losses in that area. We now have evidence of its occurrence in Shropshire and in North East England.

There is, then, every reason to suspect that the disease has a wide distribution in fluke infested districts and its possible presence must now be considered in every investigation of sudden deaths among adult sheep during the autumn and winter seasons. *Post-mortem* examination as soon as possible after death is the first essential and then the liver should be carefully searched for local necrotic lesions. Where such lesions are found, two pieces of the affected liver should be sent for laboratory investigation, one in the fresh state and one in 10 per cent. formol saline. These specimens should be accompanied by the practitioner's report on the macroscopic examination of the liver and other organs.

The specimens on which we base our conclusion that black disease occurs in districts other than the Caithness area, where it has been so competently investigated by Mr. Jamieson and his colleagues, were received from Devon, through Messrs. D. Harkness and H. Wilkinson, from Shropshire, through Mr. W. H. Parker and from the North of England through Mr. W. Lyle Stewart.

Yours faithfully,
ALEX THOMSON.
HELEN E. ROSS.

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SO-CALLED SKIN TUBERCULOSIS OF BOVINES

Sir,—The N.V.M.A. is to be congratulated on the publication of the booklet which arrived with the issue of *The Veterinary Record* of March 13th.

It seems to be generally agreed that the name of the condition is an unsuitable one and I am tempted to offer the suggestion that it be re-named "ACID-FAST NODULOSIS" of bovines or briefly "A.-F.N."

The suggestion, I realise, is a bit late, but "it's never too late to mend."

Yours faithfully,
W. H. WORTLEY.

34, Bridge Street, Bungay.
March 15th, 1948.

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ELECTRICAL APPARATUS FOR THE HUMANE DESTRUCTION OF DOGS AND CATS

Sir,—Whilst the Council of the R.S.P.C.A. approve of the use of electrocution for the destruction of dogs and cats, may I point out that there will be a modification in the apparatus to bring about still further improvements and that it would therefore be wise for anyone contemplating ordering such devices to wait a little while until the newly designed machines are available.

Yours faithfully,
ARTHUR W. MOSS.
Chief Secretary, R.S.P.C.A.

105, Jermyn Street.
London, S.W.1.
March 16th, 1948.

ADVERTISERS' ANNOUNCEMENTS

Easter Holiday Arrangements

Burroughs Wellcome & Co. announce that their offices at 183-193, Euston Road, N.W.1, will be closed from 5.30 p.m. on Thursday, March 25th, to 9 a.m. on Tuesday, March 30th. An emergency staff will be on duty from 9 a.m. to 12.30 p.m. on Saturday, March 27th, to deal with urgent orders.

Messrs. Bayer Products, Ltd., wish to advise their veterinary clients that their offices at Africa House, Kingsway, London, W.C.2, will be closed on Good Friday and Saturday, March 26th and 27th, as well as on Easter Monday, March 29th. Drugs urgently required on these days can be obtained from Messrs. John Bell & Croyden, Ltd., 50 Wigmore Street, London, W.1.